

Important Advances in Clinical Medicine

Epitomes of Progress — Otolaryngology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in otolaryngology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in otolaryngology which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Otolaryngology of the California Medical Association and the summaries were prepared under its direction.

Reprint requests to: Division of Scientific and Educational Activities,
California Medical Association, 731 Market St., San Francisco, CA 94103

BSER Audiometry

BRAIN STEM EVOKED RESPONSE (BSER) audiometry is the term for the clinical use of averaged auditory evoked potentials recorded from the human scalp up to 10 msec after the auditory stimulus.

The early evoked response consists of several waves which have been numbered by Roman numerals. Wave V is the most prominent and is used for clinical study. The origin of wave V is thought to be in the region of the inferior colliculus. The latency of wave V decreases with an increase in the intensity of the stimulus and can be recorded to levels within 10 dB of threshold. The early evoked auditory response is not altered by level of attention or sedation.

Latency/sensation level functions have been established for persons whose hearing is within normal limits and are remarkably constant in different settings. A conductive hearing loss is shown by an increase in the latency of wave V at all sensation levels of the stimulus. A sensorineural hearing loss with recruitment is characterized by increased latency of wave V near threshold with normal latency at higher stimulus intensity levels.

For site of lesion studies, the latency between wave I and wave V is also measured. Wave I is thought to represent the surface recorded cochlear

nerve action potential. A brain stem disorder is characterized by an increase in neural conduction time; wave I occurs within the normal latency while wave V is delayed.

Clinically, BSER audiometry is being used to determine auditory thresholds for very young children or those who are difficult to test, as well as for patients with functional hearing loss. Brain stem lesions such as cerebellopontine angle tumor, multiple sclerosis or brain stem vascular and neoplastic lesions may be identified with the use of the I-V intrawave latency.

JANNA SMITH LANG, PhD

REFERENCES

- Jewett D, Williston J: Auditory-evoked far fields averaged from the scalp of humans. *Brain* 94:681-696, 1971
Picton TW, Woods DL, Baribeau-Braun J, et al: Evoked potential audiometry. *J Otolaryngol* 6:90-119, 1977

Brain Stem Electric Response Audiometry

EARLY DIAGNOSIS of hearing impairment in children is extremely important. The sooner a loss is discovered and treatment begun, the better the outlook for rehabilitation.

Until recently there was no reliable method of measuring hearing in infants and young children.

All tests depended on subjective responses to a tone or noisemaker.

Now, with brain stem audiometry, it is possible to measure hearing accurately even in the newborn. The basic principle involves the measurement of minute responses that arise in the auditory pathways in the brain stem as a result of sound stimulation. These impulses, measured with scalp electrodes, are fed into a computer which extracts the responses while cancelling interfering background electrical activity.

The test is objective, requiring little cooperation on the part of the child. Best traces are obtained with a sleeping child and sedation is often used.

Whenever the parents or the doctor suspects a hearing loss, the matter should be pursued until a conclusion regarding hearing level is reached. Brain stem audiometry, an office procedure requiring approximately one hour, now enables hearing specialists to arrive at a diagnosis and begin appropriate therapy. This technique represents a significant advance in the field of otolaryngology.

DERALD E. BRACKMANN, MD

REFERENCES

- Hecox K, Galambos R: Brain stem auditory evoked responses in human infants and adults. *Arch Otolaryngol* 99:30-33, Jan 1974
 Davis H: Principles of electric response audiometry. *Ann Otol Rhinol Laryngol* 85(Suppl 28 [3 Pt 3]):1-96, May-Jun 1976

Closure of Facial Wounds

THE CLASSICAL CLOSURE of facial wounds includes a meticulous subcutaneous closure most commonly done with an absorbable suture and then a careful subcuticular or epidermal skin closure, usually done with nylon. The subcuticular closure is time consuming and unless done well does more harm than good. The interrupted epidermal closure with 6-0 nylon can be time consuming and traumatic to the wound edges because early removal is warranted.

Recently a new suture has been described. The 6-0 Davis and Geck *mild* chromic suture comes on a small sharp CE 2 cutting needle. It is most commonly placed very superficially in the wound edges using a running locking stitch. Steristrips® are then applied. The chromic is so loosely constructed that with moisture, it dissolves in three to four days. The Steristrips are changed in four to five days and the remaining suture material pulled out with the Steristrip. For insurance, the wound is dressed with Steristrips again for an additional four or five days. Initially, a mild

degree of inflammation may be present, but there is no evidence that this adversely affects healing.

This technique has been successfully used to close facial lacerations particularly in children, but also in adults. It has been used in blepharoplasties, facelifts, scar revisions, excision of skin tumors with local flap closures and to close a myriad of other wounds. The results have been as good as with any other type of closure, while postoperative trauma to the wounds has been lessened and the amount of time spent by surgeons in each procedure reduced.

TERRENCE M. DAVIDSON, MD
 ALAN M. NAHUM, MD

REFERENCE

- Webster RC, Davidson TM, Smith RC: Practical suggestions on facial plastic surgery—how I do it. *Laryngoscope* 86:1280-1284, Aug 1976

Epiglottitis: Intubation Versus Tracheotomy

INNOVATIONS IN MEDICAL THERAPEUTICS frequently lead to controversy. Successes with new techniques frequently cause physicians to eliminate other effective alternative forms of treatment which have been proven successful. In an unpredictable disease such as epiglottitis the ability to use alternative methods of treatment will yield a higher success rate.

For the past few years intubation for instituting an artificial airway has replaced tracheotomy in many centers for the treatment of supraglottitis. Many reasons are given for this change, including the following: intubators are more readily available than experienced tracheotomy surgeons, nursing is more readily available to care for intubated children than for tracheotomized children, a higher complication rate has been reported when tracheotomy is done, and earlier decannulation with intubation and shorter hospital stays have been reported when intubation is done rather than tracheotomy.

To critically analyze the effectiveness, complications and mortality of tracheotomy as the sole form of treating the airway problem in epiglottitis, a 20-year study was undertaken which included all patients admitted to Childrens Hospital of Los Angeles for treatment of this disease.

During the study, 1957 to 1977, a total of 170 patients with epiglottitis were treated by tracheotomy. Not a single death occurred in the group studied. Of the 147 patients whose charts were available for this study no serious complications